REMARKS

The Applicants appreciate the thoroughness with which the subject application has been examined. By this amendment, changes have been made in the specification and certain claims to overcome the Examiner's rejections and more concisely claim and describe the present invention. Claims 1-5, 7-12, 14-20, 22-26, 28 and 30-34 remain in the application for reconsideration by the Examiner. The Examiner's allowance of all pending claims is earnestly solicited.

MATTERS RELATED TO THE SPECIFICATION

The Examiner has objected to the specification as it does not provide a detailed description of Figure 7.

To correct this oversight, the Applicants have added a reference to Figure 7 in paragraph [0009] as indicated above. The SiGe layer referred to in the first sentence of paragraph [0009] is illustrated in Figure 7.

MATTERS RELATED TO THE CLAIMS

The Examiner has rejected claims 1-34 under Section 112, second paragraph.

The Applicants have reviewed each of these Section 112 rejections and corrected the claims accordingly.

Claims 1 and 19 stand rejected under Section 112, second paragraph, as incomplete for omitting essential steps, such omission amounting to a gap between the steps.

The Applicants have amended claims 1 and 19 to overcome this rejection by referring to the removal of contaminants from the surface.

Claims 1 stands rejected under Section 102(e) as anticipated by Yates (6,350,322).

To further distinguish the invention over the cited art, the Applicants have amended claim 1 as set forth above in the marked-up version of the claim. In particular, the Applicants have amended the preamble to, "A process for removing contaminants from a surface of a first material layer during fabrication of an integrated circuit prior to depositing a second material layer thereover, the process comprising." The Applicants have also revised step (c) to "exposing the surface to a nitrogen-containing gas at a deposition temperature of between about 500° C and 800° C to remove contaminants from the surface." Finally the Applicants have added a step (d)

"depositing the second material layer at the deposition temperature;" and a step (e) "wherein the steps (c) and (d) are performed in a single deposition chamber." Support for these changes can be found in the application in paragraphs [0026] through [0031].

Yates discloses a method of cleaning and drying a semiconductor structure. Specifically, Yates discloses a modified Marangoni drying technique wherein the rinsing is carried out in a Marangoni type dryer with an atmosphere that is inert to the semiconductor structure and to the dryer vessel. Yates' method involves drawing a semiconductor structure through an IPA (isopropyl alcohol) layer formed over a deionized water layer or by draining a deionized water bath such that in either case the IPA layer passes over the semiconductor structure, during which the DI water bath and contaminants therein are entrained beneath the IPA layer such that substantially all the DI water is removed from the semiconductor structure and no contaminants are left behind. Yates discloses use of an inert gas to avoid unwanted oxidation or other contamination. Yates explains that, "because significant oxidation occurs only after the rinsing . . . [t]he inventive method, therefore, does not expose the semiconductor structure to ambient air after rinsing." Continuing, Yates states that, "the second treatment vessel is flooded with an inert gas such as nitrogen to create an inert atmosphere, and the inert atmosphere is maintained during rinsing. Maintaining an inert atmosphere prevents unwanted oxidation caused by oxygen contact with freshly broken M-F bonds that occur during rinsing."

The sole mention of the inert gas to prevent oxidation as disclosed by Yates is insufficient to render claim 1 as amended anticipated under Section 102(e). There is no disclosure in Yates related to steps "for removing contaminants . . . prior to depositing a second material layer." Nor is there any disclosure of, "exposing the surface to a nitrogen-containing gas at a deposition temperature . . ." and "depositing the second material layer at the deposition temperature." Thus, it is suggested that claim 1 as amended is patentably distinct from the cited Yates patent.

Neither would the Applicants' invention as set forth in claim 1 be obvious in view of Yates, Chaudhry (6,690,040), and/or the Applicants' discussion in the "Background" section of the application. In rejecting other claims of the present application, the Examiner appears to have conveniently selected process steps from the cited reference. Aggregating the process steps to reject the instant claims is improper as there is no disclosure or motivation in either Yates or Chaudhry that permits the combination or any disclosure as to how the combination could be made workable to disclose the Applicants' invention.

As to the dependent claims depending directly or indirectly from claim 1, claims 2 and 4-18 have been rejected under Section 103 as unpatentable over Yates in combination with Chaudhry and Applicants' disclosure. Claim 3 stands rejected under Section 102(e) as anticipated by Yates. It is respectfully submitted that each of the rejected dependent claims 2-5, 7-12 and 14-18 further distinguishes the invention over the art of record and therefore are deemed to be in condition for allowance. Certain of these dependent claims have been amended as set forth above to comport with the amendments to independent claim 1 from which they depend.

It is further noted that the issued patent to Chaudhry was commonly owned at the time the claimed invention was made. Since the Chaudhry patent rejection is set forth under Section 103 and the patent qualifies as prior art only under Section 102(e), the provisions of Section 103(c) apply. The Chaudhry patent is therefore not prior art.

Claims 6 and 13 have been cancelled without prejudice and the Applicants reserve to right to prosecute these claims or similar claims in a continuing application. The cancellation of claims 6 and 13 is not to be construed as an admission as to the validity of the rejection or the relevance of the cited art.

Independent claim 19 and dependent claims 20-34 stand rejected under Section 103(a) as unpatentable over Yates in combination with Chaudhry and Applicants' disclosure.

The Applicants' have amended claim 19 as indicated above.

The commonly owned Chaudhry patent is not prior art against the claims of the present invention. Therefore, claim 19 is allowable since neither Yates nor the Applicants' discussion in the "Background" section of the application disclose, suggest or infer the invention as set forth in amended claim 19.

Each of the dependent claims 20, 22-26, 28 and 30-34 depending from claim 19 further distinguishes the invention over the art of record and therefore should be in condition for allowance.

Claims 21, 27 and 29 have been cancelled without prejudice and the Applicants reserve to right to prosecute this claim or a similar claim in a continuing application. The cancellation of these claims is not to be construed as an admission as to the validity of the rejection or the relevance of the cited art.

The Applicants have attempted to comply with all of the points raised in the Office Action and it is believed that the remaining claims in the application, i.e., claims 1-5, 7-12, 14-20,

22-26, 28 and 30-34 are now in condition for allowance. In view of the foregoing amendments and discussion, it is requested that the Examiner's claim rejections have been overcome. It is respectfully requested that the Examiner reconsider these rejections and objections and issue a Notice of Allowance for all the claims pending in the application.

The Applicants hereby petition for an extension of time of one month until January 20, 2006 for filing a response to the outstanding Office Action. A check in the amount of $120 payable to the Director of the USPTO is enclosed in payment of the extension of time fee.

If a telephone conference will assist in clarifying or expediting this Amendment, the Examiner is invited to contact the undersigned at the telephone number below.

Respectfully submitted,

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CERTIFICATE OF MAILING

I HEREBY CERTIFY that the foregoing Amendment is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Mail Stop Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 20th day of January 2006.

Pamela A. Pagel